WHAT IS CLAIMED IS

1. A semiconductor device, comprising:

a semiconductor substrate;

a gate insulating film formed on the semiconductor substrate;

a floating gate electrode formed on the gate insulating film;

first conductivity-type source and drain regions formed within the semiconductor substrate at both sides of the floating gate electrode;

a dielectric capacitor, which is connected to the floating gate electrode and has a dielectric layer;

a ferroelectric capacitor, which is connected to the floating gate electrode and has a ferroelectric layer; and

first and second polarization voltage application terminals, which are connected to the dielectric capacitor and the ferroelectric capacitor, respectively, and which apply voltage for generating polarization to the ferroelectric capacitor.

2. The semiconductor device according to claim 1,

wherein the dielectric layer of the dielectric capacitor is provided on the floating gate electrode;

wherein a polarization gate electrode is further provided on the dielectric layer;

wherein the first polarization voltage application

terminal is connected to the polarization gate electrode; and

wherein the dielectric capacitor is configured having the floating gate electrode as a lower electrode, and the polarization gate electrode as an upper electrode.

3. The semiconductor device according to claim 1, wherein the ferroelectric capacitor has a lower electrode that is provided above the floating gate electrode, and an upper electrode that is in opposition to said lower electrode, the ferroelectric layer being sandwiched between the lower electrode and the upper electrode; and

wherein the second polarization voltage application terminal is connected to the upper electrode of the ferroelectric capacitor.

4. The semiconductor device according to claim 1, further comprising a pass transistor that is connected to either the source region or the drain region and carries out ON/OFF control with a control signal.

5. The semiconductor device according to claim 1, further comprising:

an insulating film for capacitive coupling, which is provided on the floating gate electrode; and

a control gate electrode, which is provided on the insulating film for capacitive coupling.

6. The semiconductor device according to claim 1, further comprising second conductivity-type source and drain regions, which are provided within the semiconductor substrate at both sides of the floating gate electrode, and which are separated from the first conductivity-type source and drain regions;

wherein two MISFETs of opposite conductivity type are configured with the regions between the two source and drain regions serving as channel regions; and

wherein the semiconductor device functions as a nonvolatile inverter.

7. The semiconductor device according to claim 6, further comprising two insulating films for capacitive coupling, both provided above the floating gate electrode; and

control gate electrodes, each provided on an insulating film for capacitive coupling.

8. The semiconductor device according to claim 6, further comprising a first-stage inverter for inputting complementary signals to the ferroelectric capacitor and the dielectric capacitor;

wherein the semiconductor device functions as a nonvolatile flip-flop.

9. The semiconductor device according to claim 8, further comprising an intermediate inverter, which is disposed between the first-stage inverter and either the ferroelectric capacitor or the dielectric capacitor.

10. A method for driving a semiconductor device, the semiconductor device comprising:

a semiconductor substrate;

a gate insulating film formed on the semiconductor substrate;

a floating gate electrode formed on the gate insulating film;

first conductivity-type source and drain regions formed within the semiconductor substrate at both sides of the floating gate electrode;

a dielectric capacitor, which is connected to the floating gate electrode and has a dielectric layer;

a ferroelectric capacitor, which is connected to the floating gate electrode and has a ferroelectric layer; and

first and second polarization voltage application terminals, which are connected to the dielectric capacitor and the ferroelectric capacitor, respectively, and which apply voltage for generating polarization to the ferroelectric capacitor;

wherein during writing, in accordance with the information "0" or "1" that is to be written, the voltage applied to the first and second polarization voltage

application terminals is reversed between high and low.

11. The method for driving a semiconductor device according to claim 10, wherein during read-out, a read-out voltage is applied to the first polarization voltage application terminal.